UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/196,574	11/20/1998	KIRAN CHALLAPALI	PHA-23.540	9299

24737   7590   06/26/2003

PHILIPS INTELLECTUAL PROPERTY & STANDARDS
P.O. BOX 3001
BRIARCLIFF MANOR, NY   10510

EXAMINER
LEE, RICHARD J

ART UNIT	PAPER NUMBER
2613	2 4

DATE MAILED: 06/26/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

	Application No.	Applicant(s)
	09/196,574	Challapali et al
	Examiner	Art Unit
	Richard Lee	2613

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE ___3___ MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136 (a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) ☒ Responsive to communication(s) filed on *Apr 14, 2003*

2a) ☒ This action is **FINAL**.   2b) ☐ This action is non-final.

3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

Disposition of Claims

4) ☒ Claim(s) *1-16* is/are pending in the application.

   4a) Of the above, claim(s) _____ is/are withdrawn from consideratio

5) ☐ Claim(s) _____ is/are allowed.

6) ☒ Claim(s) *1-16* is/are rejected.

7) ☐ Claim(s) _____ is/are objected to.

8) ☐ Claims _____ are subject to restriction and/or election requirement

Application Papers

9) ☐ The specification is objected to by the Examiner.

10) ☐ The drawing(s) filed on _____ is/are a) ☐ accepted or b) ☐ objected to by the Examiner.

   Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examine

   If approved, corrected drawings are required in reply to this Office action.

12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13) ☐ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

   a) ☐ All b) ☐ Some* c) ☐ None of:

      1. ☐ Certified copies of the priority documents have been received.

      2. ☐ Certified copies of the priority documents have been received in Application No. _____.

      3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

   *See the attached detailed Office action for a list of the certified copies not received.

14) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).

   a) ☐ The translation of the foreign language provisional application has been received.

15) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s). _____
4) ☐ Interview Summary (PTO-413) Paper No(s). _____
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other:

1.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness

rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in
> section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are
> such that the subject matter as a whole would have been obvious at the time the invention was made to a person
> having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the
> manner in which the invention was made.

2.   Claims 1-16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Stenger of

record (DE 3608489A1) in view of Katata et al of record (5,815,601) and Woodfill et al of record

(6,215,898).

Stenger discloses a method of improving image segmentation of a video telephone scene

as shown in Figures 3 and 4, and substantially the same image processing device and system,

method of encoding a stereo pair of images, computer executable process steps to process image

data from a stereo pair of images, and apparatus for processing a stereo pair of images as claimed

in claims 1-16, comprising substantially the same input which receives a stereo pair of images (see

10 of Figure 3 and 11, 12 of Figure 4); a foreground extractor (13-15 of Figure 4 and see page 4,

lines 4-10 of translated article) coupled to the input which compares location of like pixel

information in each image to determine which pixel information is foreground pixel information

and which pixel information is background pixel information, wherein the foreground extractor

computes the difference in location of like pixels in each image and selects the foreground pixels

as those pixels whose difference in location falls above a threshold distance; wherein the stereo

pair of images are received from a stereo pair of cameras spaced closely from one another in a

video conference system (see Figure 3); the extracting includes identifying the location of like

pixels in each of the stereo pair of images, calculating the difference between the locations of like

pixels, and determining for each set of like pixels whether the difference between locations falls

above a threshold difference, and if so identifying those pixels as foreground information (see

page 4, lines 4-10 of translated article); a memory which stores process steps (i.e., as provided to

carry out functions within Figure 4), and a processor which executes the process steps stored in

the memory so as to extract foreground information from the stereo pair of images, and if the

difference in location is above a set threshold the pixel information is identified as foreground

pixel information, if below the set threshold the pixel information is determined to be background

pixel information (see page 4, lines 4-10 of translated article).

Stenger does not particularly disclose, though, the followings:

(a) a DCT block classifier coupled to the foreground extractor which determines which

DCT blocks of at least one of the images contain a threshold amount of foreground information;

and an encoder coupled to the DCT block classifier which encodes the DCT blocks having the

threshold amount of foreground pixel information with a first high level of quantization and which

encodes the DCT blocks having less than the threshold amount of foreground information as

background information at a second lower quantization level relative to the first high level of

quantization, the encoder encodes the foreground pixel information at a first high level of

quantization and which encodes background pixel information at a second lower level of

quantization relative to the first high level of quantization, wherein the encoding step encodes the

entire 8 x 8 block of DCT coefficients at the first higher quantization level if the 8 x 8 block of

DCT coefficients contains the predetermined amount of foreground pixel information, and the

encoder provides bit stream information for decoding of both the high level of quantization and

lower level of quantization that are encoded as claimed in claims 1, 4, 7, 8, 11, 12, and 14-16;

     (b) wherein the foreground pixel information is defined in terms of entire 8 x 8 blocks of

DCT coefficients, wherein the encoding step encodes an entire 8 x 8 block of DCT coefficients as

foreground information if at least a predetermined number of foreground pixels are within the 8 x

8 block, otherwise the entire 8 x 8 block of DCT coefficients is encoded as background

information as claimed in claims 6 and 10; and

     (c) wherein at least a majority of a bandwidth is encoded at the first high quantization level

and the first high/higher level of quantization as claimed in claims 1, 4, 7, 8, 11, and 14.

     Regarding (a) and (b), Katata et al discloses an image encoder as shown in Figure 1, and

teaches the conventional use of a DCT block classifier (i.e., within 106 of Figure 1, and see

column 5, lines 1-4) coupled to a foreground extractor (i.e., 101, 102 of Figure 1 and see column

4, line 45 to column 5, line 4) for determining which DCT blocks of at least one of the images

contain a threshold amount of foreground information; an encoder (i.e, within 106 of Figure 1,

and see column 5, lines 1-4) coupled to the DCT block classifier which encodes the DCT blocks

having the threshold amount of foreground information with a first high level of quantization and

which encodes the DCT blocks having less than the threshold amount of foreground information

as background information (i.e., background information is being provided by the threshold 15 of

Figure 4 of Stenger et al) at a second lower quantization level (see column 1, lines 12-25, columns

7-8) relative to the first high level of quantization (i.e., different quantization step sizes pertaining

to a selected area of interest are assigned, with high and low quantization level selections, see

column 7, line 49 to column 8, line 24, column 9, line 38 to column 10, line 13), the encoder

encodes the foreground pixel information at a first high level of quantization and which encodes

background pixel information at a second lower level of quantization (see column 1, lines 12-25,

columns 7-8), wherein the encoding step encodes the entire 8 x 8 block of DCT coefficients at the

first higher quantization level if the 8 x 8 block of DCT coefficients contains the predetermined

amount of foreground pixel information (see column 1, lines 12-58, columns 7-8); wherein the

foreground pixel information is defined in terms of entire 8 x 8 blocks of DCT coefficients,

wherein the encoding step encodes an entire 8 x 8 block of DCT coefficients as foreground

information if at least a predetermined number of foreground pixels are within the 8 x 8 block,

otherwise the entire 8 x 8 block of DCT coefficients is encoded as background information (see

column 1, lines 12-58, columns 7-8). In addition, Katata et al teaches the conventional use of the

encoder providing bit stream information (i.e., the different quantization levels assigned for the

specific areas are being transmitted to the decoder as shown in Figures 2 and 18) for decoding of

both the high level of quantization and lower level of quantization that are encoded. Therefore, it

would have been obvious to one of ordinary skill in the art, having the Stenger and Katata et al

references in front of him/her and the general knowledge of stereo image processings within

videophone environments, would have had no difficulty in providing the DCT block classifier, an

encoder for providing different quantization level processings for foreground and background

Page 6

image data, and a corresponding decoder for decoding of both the high level of quantization and lower level of quantization as taught by Katata et al for the stereo image videophone system within Stenger for the same well known image compressions purposes as claimed.

Regarding (c), it is noted that Katata et al does teach the particular finer quantization for areas of interest, such as the facial region (i.e., foreground data, see column 1, lines 12-25, column 4, lines 45-61, column 5, lines 5-20, column 7, line 26 to column 8, line 23, column 9, line 36 to column 10, line 13, Figures 1, 13, 14b, 17). It is well recognized in the art that finer quantization requires more bandwidth. And though Katata is silent as to where a majority of the bandwidth is encoded, it is nevertheless considered obvious that a majority of a bandwidth is encoded for the foreground data (i.e., facial region) since a finer quantization level is required. In any event, Woodfill et al discloses a data processing system and teaches the conventional allocation of a majority of bandwidth for foreground information over background information (see column 123, lines 34-49). Therefore, it would have been obvious to one of ordinary skill in the art, having the Stenger, Katata et al, and Woodfill et al references in front of him/her and the general knowledge of foreground/background encoding of video data, would have had no difficulty in using the particular majority of bandwidth allocation for foreground data as taught by Woodfill et al to provide a majority of a bandwidth to be encoded at the first high quantization level and the first high/higher level of quantization for the foreground data of Katata et al and Stenger for the same well known image quality control and bandwidth allocation control purposes as claimed.

3.   Claims 1-16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Stenger of

record (DE 3608489A1) in view of Katata et al of record (5,815,601) and Monro et al of record

(6,078,619).

Stenger discloses a method of improving image segmentation of a video telephone scene

as shown in Figures 3 and 4, and substantially the same image processing device and system,

method of encoding a stereo pair of images, computer executable process steps to process image

data from a stereo pair of images, and apparatus for processing a stereo pair of images as claimed

in claims 1-16, comprising substantially the same input which receives a stereo pair of images (see

10 of Figure 3 and 11, 12 of Figure 4); a foreground extractor (13-15 of Figure 4 and see page 4,

lines 4-10 of translated article) coupled to the input which compares location of like pixel

information in each image to determine which pixel information is foreground pixel information

and which pixel information is background pixel information, wherein the foreground extractor

computes the difference in location of like pixels in each image and selects the foreground pixels

as those pixels whose difference in location falls above a threshold distance; wherein the stereo

pair of images are received from a stereo pair of cameras spaced closely from one another in a

video conference system (see Figure 3); the extracting includes identifying the location of like

pixels in each of the stereo pair of images, calculating the difference between the locations of like

pixels, and determining for each set of like pixels whether the difference between locations falls

above a threshold difference, and if so identifying those pixels as foreground information (see

page 4, lines 4-10 of translated article); a memory which stores process steps (i.e., as provided to

carry out functions within Figure 4), and a processor which executes the process steps stored in

the memory so as to extract foreground information from the stereo pair of images, and if the

difference in location is above a set threshold the pixel information is identified as foreground

pixel information, if below the set threshold the pixel information is determined to be background

pixel information (see page 4, lines 4-10 of translated article).

Stenger does not particularly disclose, though, the followings:

(a) a DCT block classifier coupled to the foreground extractor which determines which

DCT blocks of at least one of the images contain a threshold amount of foreground information;

and an encoder coupled to the DCT block classifier which encodes the DCT blocks having the

threshold amount of foreground pixel information with a first high level of quantization and which

encodes the DCT blocks having less than the threshold amount of foreground information as

background information at a second lower quantization level relative to the first high level of

quantization, the encoder encodes the foreground pixel information at a first high level of

quantization and which encodes background pixel information at a second lower level of

quantization relative to the first high level of quantization, wherein the encoding step encodes the

entire 8 x 8 block of DCT coefficients at the first higher quantization level if the 8 x 8 block of

DCT coefficients contains the predetermined amount of foreground pixel information, and the

encoder provides bit stream information for decoding of both the high level of quantization and

lower level of quantization that are encoded as claimed in claims 1, 4, 7, 8, 11, 12, and 14-16;

(b) wherein the foreground pixel information is defined in terms of entire 8 x 8 blocks of

DCT coefficients, wherein the encoding step encodes an entire 8 x 8 block of DCT coefficients as

foreground information if at least a predetermined number of foreground pixels are within the 8 x

8 block, otherwise the entire 8 x 8 block of DCT coefficients is encoded as background

information as claimed in claims 6 and 10; and

(c) wherein at least a majority of a bandwidth is encoded at the first high quantization level

and the first high/higher level of quantization as claimed in claims 1, 4, 7, 8, 11, and 14.

Regarding (a) and (b), Katata et al discloses an image encoder as shown in Figure 1, and

teaches the conventional use of a DCT block classifier (i.e., within 106 of Figure 1, and see

column 5, lines 1-4) coupled to a foreground extractor (i.e., 101, 102 of Figure 1 and see column

4, line 45 to column 5, line 4) for determining which DCT blocks of at least one of the images

contain a threshold amount of foreground information; an encoder (i.e, within 106 of Figure 1,

and see column 5, lines 1-4) coupled to the DCT block classifier which encodes the DCT blocks

having the threshold amount of foreground information with a first high level of quantization and

which encodes the DCT blocks having less than the threshold amount of foreground information

as background information (i.e., background information is being provided by the threshold 15 of

Figure 4 of Stenger et al) at a second lower quantization level (see column 1, lines 12-25, columns

7-8) relative to the first high level of quantization (i.e., different quantization step sizes pertaining

to a selected area of interest are assigned, with high and low quantization level selections, see

column 7, line 49 to column 8, line 24, column 9, line 38 to column 10, line 13), the encoder

encodes the foreground pixel information at a first high level of quantization and which encodes

background pixel information at a second lower level of quantization (see column 1, lines 12-25,

columns 7-8), wherein the encoding step encodes the entire 8 x 8 block of DCT coefficients at the

first higher quantization level if the 8 x 8 block of DCT coefficients contains the predetermined

amount of foreground pixel information (see column 1, lines 12-58, columns 7-8); wherein the

foreground pixel information is defined in terms of entire 8 x 8 blocks of DCT coefficients,

wherein the encoding step encodes an entire 8 x 8 block of DCT coefficients as foreground

information if at least a predetermined number of foreground pixels are within the 8 x 8 block,

otherwise the entire 8 x 8 block of DCT coefficients is encoded as background information (see

column 1, lines 12-58, columns 7-8). In addition, Katata et al teaches the conventional use of the

encoder providing bit stream information (i.e., the different quantization levels assigned for the

specific areas are being transmitted to the decoder as shown in Figures 2 and 18) for decoding of

both the high level of quantization and lower level of quantization that are encoded. Therefore, it

would have been obvious to one of ordinary skill in the art, having the Stenger and Katata et al

references in front of him/her and the general knowledge of stereo image processings within

videophone environments, would have had no difficulty in providing the DCT block classifier, an

encoder for providing different quantization level processings for foreground and background

image data, and a corresponding decoder for decoding of both the high level of quantization and

lower level of quantization as taught by Katata et al for the stereo image videophone system

within Stenger for the same well known image compressions purposes as claimed.

Regarding (c), it is noted that Katata et al does teach the particular finer quantization for

areas of interest, such as the facial region (i.e., foreground data, see column 1, lines 12-25,

column 4, lines 45-61, column 5, lines 5-20, column 7, line 26 to column 8, line 23, column 9, line

36 to column 10, line 13, Figures 1, 13, 14b, 17). It is well recognized in the art that finer

quantization requires more bandwidth. And though Katata is silent as to where a majority of the

bandwidth is encoded, it is nevertheless considered obvious that a majority of a bandwidth is

encoded for the foreground data (i.e., facial region) since a finer quantization level is required. In

any event, Monro et al discloses an object oriented video system and teaches the conventional use

of a bit rate manager 42 of Figure 1 for allocation of a majority of bandwidth for foreground

information over background information (see column 2, lines 55-63, column 5, lines 30-37,

column 6, lines 7-17). Therefore, it would have been obvious to one of ordinary skill in the art,

having the Stenger, Katata et al, and Monro et al references in front of him/her and the general

knowledge of foreground/background encoding of video data, would have had no difficulty in

using the particular majority of bandwidth allocation for foreground data as taught by Monro et al

to provide a majority of a bandwidth to be encoded at the first high quantization level and the first

high/higher level of quantization for the foreground data of Katata et al and Stenger for the same

well known image quality control and bandwidth allocation control purposes as claimed.

4.   Regarding the applicants' arguments at pages 5-8 of the amendment filed April 14, 2003

concerning the newly amended limitations and in general that "... However, it is alleged that

Katata discloses points (a) and (b) but does not disclose point (c). For this last point (c), it is

alleged that Woodfill makes such a disclosure and the claimed invention allegedly would have

been obvious to a person of ordinary skill in the art over the combination of teachings of the

references ... Katata is silent with regard to how the majority of bandwidth is encoded ... it is

respectfully submitted that at the time of invention, a person of ordinary skill in the art would not

have gleaned that the majority of bandwidth was being encoded for a first higher level

quantization from the teachings of the combination of references ... Woodfill, in combination with

Stenger and Katata, still fails to disclose that a majority of bandwidth would be sent at a first

quantization level, and the encoder provides bit stream information for decoding of both the high

level of quantization and lower level quantization ... The minority of bandwidth is assigned to

background information, but nonetheless still encodes and transmits both quantization levels on

the same bandwidth ...", the Examiner wants to point out that Katata et al is also interested in the

particular quantization level selective control based on the selected areas of images, with high and

lower levels of quantization being assigned to the respective areas (see column 7, line 49 to

column 8, line 24), and the particular transmission of the encoded data (i.e., as provided by 103,

105 of Figure 1; 113, 116, 117 of Figure 17) to a decoder (i.e., Figures 2 and 18) for decoding of

both the high level of quantization and lower level of quantization. And it is submitted again that

since Katata et al teaches the particular finer quantization for areas of interest, such as the facial

region (i.e., foreground data, see column 1, lines 12-25, column 4, lines 45-61, column 5, lines 5-

20, column 7, line 26 to column 8, line 23, column 9, line 36 to column 10, line 13, Figures 1, 13,

14b, 17) and since it is well recognized in the art that finer quantization requires more bandwidth,

it is thereby follows that it is considered obvious that a majority of a bandwidth is encoded for the

foreground data (i.e., facial region) since a finer quantization level is required. And the particular

majority of bandwidth allocation to the foreground data, with higher quantization level coding for

such foreground data as provided by Katata, is emphasized by Woodfill (see column 123, lines

34-49). It is therefore submitted again that one skilled in the art would certainly have no

difficulty in using the particular majority of bandwidth allocation for foreground data as taught by

Woodfill et al to provide a majority of a bandwidth to be encoded at the first high quantization

level and the first high/higher level of quantization for the foreground data of Katata et al and

Stenger for the same well known image quality control and bandwidth allocation control purposes

as claimed.

Regarding the applicants' arguments at page 9 of the amendment filed April 14, 2003

concerning in general that "... Monro teaches selective transmission of foreground information by

transmitting only the foreground blocks that improve the image .. Monro discloses that in order to

separate background information, two separate versions of the background ... This type of system

is distinguishable from Katata and Stenger, and it is respectfully submitted that (1) there is no

suggestion to combine the teachings of the reference; and (2) even if the references were to be

combined, assuming arguendo, presently claimed invention would not suggest to create an image

processing device having a stereo pair of images and at least an encoder as claimed.", the

Examiner wants to point out that though Monro et al may teach the particular construction of two

separate versions of background information and other features such as the coding and sorting of

blocks, the critical issue at hand is that Monro et al teaches the conventional use of a bit rate manager 42 of Figure 1 for allocation of a majority of bandwidth for foreground information over background information (see column 2, lines 55-63, column 5, lines 30-37, column 6, lines 7-17). And it is submitted again that in view of the particular bandwidth allocation for foreground data as taught by Monro et al, it is considered obvious to provide a majority of a bandwidth to be encoded at the first high quantization level and the first high/higher level of quantization for the foreground data of Katata et al and Stenger for the same well known image quality control and bandwidth allocation control purposes as claimed. For the above reasons, it is further submitted that the combination of Monro et al, Katata et al and Stenger renders obvious the claimed invention.

5.   Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL.** See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however,

will the statutory period for reply expire later than SIX MONTHS from the date of this final

action.

6.   **Any response to this final action should be mailed to:**

        Box AF

               Commissioner of Patents and Trademarks

               Washington, D.C. 20231

        or faxed to:

               (703) 872-9314, (for formal communications; please mark "EXPEDITED

               PROCEDURE") (for informal or draft communications, please label

               "PROPOSED" or "DRAFT")

        Hand-delivered responses should be brought to Crystal Park II, 2121 Crystal Drive,

        Arlington. VA., Sixth Floor (Receptionist).

7.   Any inquiry concerning this communication or earlier communications from the examiner should be directed to Richard Lee whose telephone number is (703) 308-6612. The Examiner can normally be reached on Monday to Friday from 8:00 a.m. to 5:30 p.m, with alternate Fridays off.

        Any inquiry of a general nature or relating to the status of this application should be directed to the Group customer service whose telephone number is (703) 306-0377.

RICHARD LEE
PRIMARY EXAMINER

Richard Lee/rl

6/19/03